

Moms Can Work Too

Luisa Hansen

I came to the United States from Chile in 1955. After I received my Ph.D. in Nuclear Physics from UC Berkeley in 1959, I started to interview for jobs in the Bay Area. One of the common questions I was asked at interviews was, “Would you be able to work with the technicians?” It had nothing to do with knowledge, but about how I was going to handle situations with men in the mechanical or electrical shops. They couldn’t grasp that I could deal with men. I kept telling them, “Look, I have done all this stuff at the university. I don’t have any problems working with men, and I don’t expect any problems.” But they never got back to me with any offers.

Then I interviewed at Lawrence Livermore; it was the only place that offered me a job. But after Berkeley, Livermore was a real shock with all the fences and the guards. It was a very different environment, and it took me time to get adjusted.

Sometimes, it was really amusing to listen to the men. For example, at lunch time, the fellows in the division would ask me, “Why do you work here?”

“Because I like it.” I would say.

“Yeah, but you have a child.”

“Yes, I do.”

“But who takes care of him?”

I had to answer all these questions, and more than once. I found it funny, because I came from a country in which many of the middle-class older women are professionals. My mother worked all her life. I would answer, “Look, my mother worked, and none of us came out to be juvenile delinquents.” But their attitude was that my son would be a juvenile delinquent because I worked.

I have never distinguished between a woman physicist and a man physicist. It’s just not the right approach to any problem. You are an M.D. or an engineer or a physicist. The fact that you are a woman or a man is accidental and has nothing to do with your ability to do the job.



Luisa Hansen.

Since the 1970s and 1980s, the number of women has increased, and more opportunities have opened up. In the 1970s, I got involved in a project of immediate value to the Lab, on which I eventually worked for almost 20 years. As a result of that project, I was chosen to be a Fellow of the American Nuclear Society, which was a very nice distinction as a scientist.

Now there are more younger, bright women at the Lab. And of course, a new generation of men has come, who more or less got used to seeing women at the university in their classes and here at the Lab, much more than their parents did. I think that the attitude of men in the Lab has changed as a result of that.

Expect the Unexpected

Gus Carlson

When one door closes, another opens, even though the transition may be a little scary.

I n June 1964, I arrived for a summer job at the Lab. As a native of Pittsburgh, Pennsylvania, and a graduate student at Carnegie Institute of Technology, I had never been west of Illinois. Being in California was a grand adventure. It was also a bit scary, since I knew no one in California and had just spent most of my money driving across the continent.

On my first day of work, I was given my Green Badge (in those days, we filled out a security form about 2 months before reporting to work to ensure a Q clearance upon arrival) and was told to report to the Pluto Project. Pluto, I soon learned, was an astounding nuclear ramjet project that had already shown promise in Nevada Test Site experiments. I was thrilled to be involved.

Then on about my third day at the Lab, all Pluto personnel were called to the Building 123 auditorium where we were told that despite its early successes, the Pluto Project was canceled, effective immediately. I was devastated. My first real research assignment was gone before I could contribute and worries about how to get my car back to Pennsylvania with no gas money began to fill my head.

But the Lab didn’t miss a beat. By the next day, I had a new assignment, and I ended the summer fully satisfied with my Lab experience. I returned for the summer of 1965 and began my career employment in 1966, retiring in 2000. Over those years, I was involved with many projects, some of which suffered dramatic reversals of fortune. But one of the most important things I learned at the Lab was the lesson I got during that first week back in 1964: if you work hard at the assignment you’ve got and are flexible about your next assignment, then the Lab is a great place to be employed.

Out of the Sea

Glenn Werth

Werth tells of a time when resilience, foresight, and timing turned the demise of a Plowshare Project into the beginning of the Lab's Energy Research & Development program.

I will never forget a remark made to me at a meeting of the Sea Level Canal Commission. This remark would be the beginning of a historic shift in the Laboratory's focus. The commission had been set up by Congress to determine the technical feasibility, the need, and the political acceptability of constructing a new sea-level canal through the Isthmus of Panama using nuclear explosives. In 1957, the Laboratory's tacit assumption had been that there was a need for a sea-level canal. During a coffee break, one of the commissioners told me their study would conclude that there was no need for a sea-level canal. I was taken aback.

That night, I assessed the potential impact of this new development. All the funding for the Plowshare Program was aimed at developing technology for the canal. There were some two hundred scientists and engineers at the Laboratory working on the Plowshare Program, and now there was no longer justification for the program. While I had no involvement in setting up the Plowshare Program, I had a responsibility to the employees working on the program. Other work had to be found and funded.

We began in earnest to market contained nuclear explosive applications. The Atomic Energy Commission rightly stipulated that we had to find an industrial partner to co-sponsor any nuclear experiment. And indeed we did.

The El Paso Natural Gas Company came forward, and we carried out the Gasbuggy experiment of using a nuclear explosive to fracture a gas reservoir so it would produce gas at a higher rate. The experiment was a success. Subsequently, the Austral Oil Company sponsored a nuclear gas stimulation experiment (Rulison) in one of its gas fields in Colorado. The Los Alamos Laboratory supplied the explosive and, again, gas was produced at a higher rate.

With these promising results, the CER Geonuclear Corporation sponsored the Rio Blanco experiment in 1973. The gas stimulation expected, however, did not occur. Nonetheless, planning proceeded on three other gas stimulation projects with industrial partners.

At this point in 1971, the general public was beginning to be increasingly negative about nuclear power because of the concern over radioactivity. Our industrial partners, one by one, backed away because, in most cases, they thought that this negative public reaction to nuclear power would spill over to Plowshare projects.

With disappearing industrial partners for Plowshare, it became clear that the talents of the many scientists and engineers had to be shifted to a different end objective. What could that be?

In 1970, the National Petroleum Council projected that the United States demand for energy would increase by about 90% from 1970 to 1985. The only apparent source for this increase was from the Middle East oil fields, yet the policy of the United States was to not become dependent on imported oil. If the projection turned out to be true, could this increased demand trigger an energy crisis?

As an associate director, I established a small group of senior scientists and engi-

neers in early 1971 to investigate this question and the feasibility of a national research and development program devoted to energy usage. The group developed data for the U.S. and the world on all aspects of energy: sources, uses, environmental impact, conservation, and costs. Understanding energy costs was particularly important. By the end of the year, we had credible data leading to the conclusion that, in all likelihood, there would be an energy crisis. What we did not know was when the crisis would become generally recognized.

In 1972, we started to hold a series of briefings on the energy crisis for Laboratory scientists and engineers. We announced our findings of the energy problem and asked for any R&D ideas. Ideas flowed in and were evaluated. The Laboratory was ready with energy R&D project proposals.

Shortly thereafter, the 1973 Middle East War occurred, and the members of the Organization of Arab Petroleum Exporting Countries cut off oil exports to the United States. The Energy Group members were asked to brief the AEC commissioners on the energy problem. We participated with the National Petroleum Council in a two-day presentation of the energy problem for the Department of Defense, and the members of the Joint Committee on Atomic Energy of the Congress requested a briefing. Eventually, the President announced the achievement of energy independence by 1985 as a national goal.

With this recognition in Washington that the Laboratory fully understood the energy problem, the energy R&D proposals submitted by the Laboratory were well received. The Lab had come a long way since the Sea Level Canal Commission.